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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,074	03/24/2005	Eiji Ogata	SAEG159.004APC	1882
20995 7590 01/08/2008 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			EXAMINER NWAONICHA, CHUKWUMA O	
			ART UNIT 1621	PAPER NUMBER
			NOTIFICATION DATE 01/08/2008	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
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Office Action Summary

Application No.

10/529,074

Applicant(s)

OGATA ET AL.

Examiner

Chukwuma O. Nwaonicha

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>06/17/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Current Status

1. Claims 1-19 are pending in the application.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulhall et al., {WO 92/02493} in view of Kushima et al., {JP 63048261}.

Applicants claim a process for producing 4,4'-dihydroxydiphenylsulfone of high purity; wherein all the variables are as defined in the claims.

Determination of the scope and content of the prior art (M.P.E.P. §2141.01)

Mulhall et al. teach a process for producing 4,4'-dihydroxydiphenylsulfone by dehydration reaction of phenol with a sulfonating agent or phenolsulfonic acid in the presence of an aromatic nonpolar solvent (organic solvent) in a high yield and high purity of product. The process of Mulhall et al. also specified the isomerization of 2,4'-dihydroxydiphenylsulfone to 4,4'-dihydroxydiphenylsulfone. Mulhall et al. cited the use of catalyst as taught by Ogata et al. (US 5,189,223, see column 1, lines 58-68). See pages 1-8 and the examples of WO 92/02493.

Ascertainment of the difference between the prior art and the claims (M.P.E.P. §2141.02)

Mulhall et al. process for producing 4,4'-dihydroxydiphenylsulfone differs from the instantly claimed process in that applicants' claim a process that employs a polar solvent (C₄₋₁₅ higher alcohols, polyols and phenols) while Mulhall et al. employed water, methanol and ethanol as polar solvents.

However, Kushima et al. teach a process of purifying a crude bisphenol sulfone obtained by dehydrating phenols with sulfuric acid in the presence of one or more solvents selected from **hydroxyl group-containing organic compounds** (e.g. n-butanol or xlenol) and water at 100-200°C for 10min-5hr, then cooled to room temperature, filtered and washed to give a purified 4,4'-dihydroxydiphenylsulfone. See abstract.

Finding of prima facie obviousness--rational and motivation (M.P.E.P. §2142-2143)

The instantly claimed process for producing 4,4'-dihydroxydiphenylsulfone would have been suggested to one of ordinary skill because one of ordinary skill wishing to obtain purified 4,4'-dihydroxydiphenylsulfone is taught to employ the process of Mulhall et al. and Kushima et al.

One of ordinary skill in the art would have a reasonable expectation of success in practicing the instant invention by varying the process conditions from the teaching of Mulhall et al. and Kushima et al. to arrive at the instantly claimed process for preparing purified 4,4'-dihydroxydiphenylsulfone. Said person would have been motivated to practice the teaching of the references cited because they demonstrate that purified 4,4'-dihydroxydiphenylsulfone is useful in industrial applications.

The Examiner notes that varying the reaction conditions in a chemical reaction is a well-known chemical practice to optimize the process efficiency of the system and does not constitute a patentable distinction.

Moreover, all the claimed elements were known in the prior art and one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yielded predictable results to one of ordinary skill in the art at the time of the invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chukwuma O. Nwaonicha whose telephone number is 571-272-2908. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

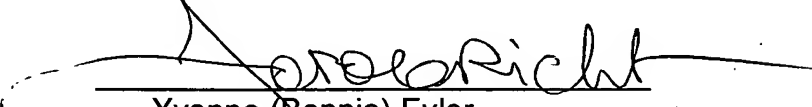
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne (Bonnie) Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chukwuma O. Nwaonicha, Ph.D.
Patent Examiner
Art Unit: 1621


Yvonne (Bonnie) Eyler
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